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# A cross-sectional study to explore the attitude of organ donation among school students and teachers in Makkah region, Saudi Arabia

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## ABSTRACT

**Background:** Organ transplantation is significant last treatment for several diseases. Schools play an important role in educating students about organ donation and it's important. Thus, this study focusing on determines attitude of students and teachers about organ donation. **Methodology:** An online survey was distributed among schools in Makkah region, Saudi Arabia among February 2022. **Results:** Overall, 490 participants from Makkah region schools were included in this study. Only 1.2% of participants had a previous history of organ transplantation, while 35.5% desired to donate. Most of the participants have not had organ donation cards. The majority of participants believed that organ donation to everyone (N=398) and the term "life-saving" are the major cause to donate organs (N=455). However, our included participants believed that kidneys only could be donated (N=194). Both students and teachers significantly corresponded to the previous past history of donation, individuals to donate to and organs to donate to (P-value, 0.004, 0.001, 0.010, respectively). **Conclusion:** Most of participants unwilling to enroll in organ transplant programs. Therefore, it is critical to engage these individuals and provide immediate registration opportunities. Furthermore, promotional and awareness programs are also mandatory to aware school community regarding the significance of organ donation.

**Keywords:** Organ donation, Attitude, School students, Schoolteachers, Makkah region, Saudi Arabia.

## 1. INTRODUCTION

The development of organ transplantation in the second half of the 20th century has been a remarkable achievement (Jabri et al., 2016; Aldawood et al., 2007). Recently, organ transplantation has been one of the most effective options for end-stage organ failure (Jabri et al., 2016; Abouna et al., 2001). However, its success has been dependent on public awareness, support and active participation. Without these factors, the efficiency of organ transplantation and the consequent saving, or extension of lives would have undoubtedly suffered adversely (Jabri et al., 2016; Broumand & Asgari, 2012).

To monitor organ donation and transplantation efforts in Saudi Arabia, the National Kidney Foundation, currently known as the Saudi Center for Organ Transplantation (SCOT), was founded in 1984. Research, the distribution of donation cards, training of healthcare personnel and public awareness are just a few of the various initiatives used by SCOT (Jabri et al., 2016; Alam, 2007; Shaheen et al., 2000; Jabri et al., 2016; Aswad et al., 1992). But despite the enormous public education and motivation campaigns on organ donation, the number of organ donors still falls short of the lengthening waiting list (Jabri et al., 2016; El-Shoubaki & Bener, 2005; Shaheen, 1994; Al Shehri et al., 2005). Hence, a major obstacle to transplantation is still Saudi Arabia's inadequate organ donation program (Jabri et al., 2016; El-Shoubaki & Bener, 2005; Shaheen, 1994; Al Shehri et al., 2005).

The role of health professionals is essential because they are the first link between the patients and the donors or the donor's family (Inthorn et al., 2014; Sharaan et al., 2021). There is evidence suggesting that healthcare professionals' attitudes can play an imperative role in rates of organ donations, promotion of organ donation campaigns and its successes (Inthorn et al., 2014; Alsharidah et al., 2018). Accordingly, in this study we aimed to determine the related attitude toward organ donation among school students and teachers in Makkah region, Saudi Arabia.

## 2. METHODOLOGY

In this cross-sectional descriptive survey, we include both male and female participants from high school students and teachers in the Makkah region after obtaining an IRB from UQU's research ethics committee with number: (HAPO-02-K-012-2022-03-991).

A self-structured questionnaire was distributed to students and teachers using an online Google platform. We began by gathering participants' demography and then we collected general organ donation information's to assess participants' attitudes towards organ donation based on a previously published survey (Jabri et al., 2016). Participants were given the survey among February 2022. The researchers were on hand to answer any inquiries participants had concerning the survey. Participants were asked to give their consent electronically before answering the questionnaire and they completed so voluntarily. Participants who gave their agreement to participate in the survey were included, while those who did not agree were excluded. MS Excel sheet was used for data checking first. Then, we ran the data into SPSS v.26 for data analysis. The Chi-square test determined standard deviation and significance. A significance level of <0.05 will be used for all analyses and it will be considered statistically significant.

## 3. RESULTS

We included 490 participants in the Makkah region in this survey; a mean of 24 years old was estimated with (SD=13.91). There was a similar close response between male and female participants with male predominance (51.4%, 48.6%, respectively) (Table 1). Most of the study respondents were students compared with teachers (70.6, 29.4%, respectively) (Table 1). Saudis' participants were higher in responding compared with non-Saudis (Table 1). Only 1.2% of participants had a previous history of donation, compared with participants with no history of donation 98.8% (Table 1). The majority of participants showed no desire to donate organs compared with those who desired donation. Most respondents have not had organ donation cards, while only 3.3% have cards (Table 1).

Most participants showed a willingness to donate to everyone, followed by 18.4% to donate to family only and only 0.4% showed a willingness to donate to friends (Table 2).

The term "life-saving" was donated by a majority of participants (Table 2). Most participants show religious and medical effectiveness causes for donation (21.6%, 21%, respectively) (Table 2). Kidneys are the organ to donate according to participants, followed by all organs that can be donated (39.6%, 31%, respectively)

**Table 1** Demographic data

Variable	Category	Frequency n. (%)
Age ( <i>mean [SD]</i> )	(24.5 [13.91])	
Gender	Male	252 (51.4)
	Female	238 (48.6)
Work	Teacher	144 (29.4)
	Student	346 (70.6)
Nationality	Saudi	413 (84.3)
	Non-Saudi	77 (15.7)
History of donation	Yes	6 (1.2)
	No	484 (98.8)
Desir of donation	Yes	174 (35.5)
	No	316 (64.5)
Having an organ donation card	Yes	16 (3.3)
	No	474 (96.7)

**Table 2** General attitude toward organ donation among participants

Variable	Category	N	(%)
Donation is to	Family	90	(18.4%)
	Friend	2	(0.4%)
	All	398	(81.2%)
Cause of Donation	Life saving	455	(92.9%)
	Sympathy	9	(1.8%)
	Financial reasons	3	(0.6%)
	Responsibility	1	(0.2%)
	I don't know	13	(2.7%)
	Other	9	(1.8%)
Reasons for denying donation	Religion	106	(21.6%)
	Family	85	(17.3%)
	Medical Affect	103	(21.0%)
	Medical status	44	(9.0%)
	Age	8	(1.6%)
	Relative	9	(1.8%)
	I don't know	113	(23.1%)
	Other	22	(4.5%)
Most Organ for Donation	Kidney	194	(39.6%)
	Blood	60	(12.2%)
	Heart	36	(7.3%)
	Eye	2	(0.4%)
	Liver	12	(2.4%)
	Bone	3	(0.6%)
	Lang	6	(1.2%)
	All	152	(31.0%)
	I don't know	25	(5.1%)

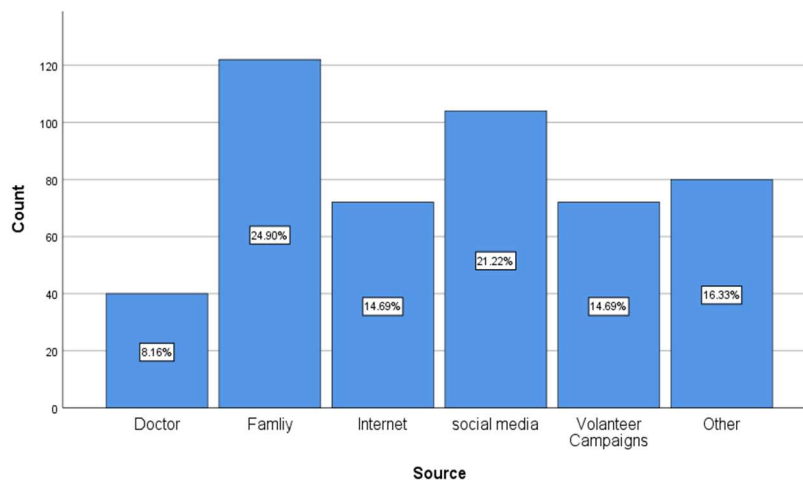
Table 3 shows the association between occupational status and participants' demography and attitude towards organ donation. Both students and teachers show a significant association with the past donation history (P-value, 0.004). Furthermore, both

students and teachers significantly respond to all members and individuals (P-value, 0.001). Additionally, both students and teachers believed that the kidney is the organ to donate significantly (P-value, 0.010). On the other hand, teachers showed significant responses to religious causes for donation, while students showed significant responses to "don't know" reasons (P-value, 0.000) (Table 3).

**Table 3** The association between general attitude of organ donation and participants' occupation

Category		Occupation				P value
		Teacher		Student		
		N	%	N	%	
Awareness of organ donation term	Yes	140	97.2%	325	93.9%	.131
	No	4	2.8%	21	6.1%	
Past history of donation	Yes	5	3.5%	1	0.3%	.004*
	No	139	96.5%	345	99.7%	
Desire to donate	Yes	51	35.4%	123	35.5%	.978
	No	93	64.6%	223	64.5%	
Have organ donation Card	Yes	8	5.6%	8	2.3%	.066
	No	136	94.4%	338	97.7%	
Donation is to	Family	41	28.5%	49	14.2%	.001*
	Friend	0	0.0%	2	0.6%	
	All	103	71.5%	295	85.3%	
Cause of Donation	life saving	136	94.4%	319	92.2%	.824
	Sympathy	2	1.4%	7	2.0%	
	Financial reasons	1	0.7%	2	0.6%	
	Responsibility	0	0.0%	1	0.3%	
	I don't know	4	2.8%	9	2.6%	
	Other	1	0.7%	8	2.3%	
Reasons for denying donation	Religion	50	34.7%	56	16.2%	.000*
	Family	16	11.1%	69	19.9%	
	Medical Affect	23	16.0%	80	23.1%	
	Medical status	15	10.4%	29	8.4%	
	Age	2	1.4%	6	1.7%	
	Relative	4	2.8%	5	1.4%	
	I don't know	31	21.5%	82	23.7%	
	Other	3	2.1%	19	5.5%	
Most Organ for Donation	Kidney	74	51.4%	120	34.7%	.010*
	Blood	14	9.7%	46	13.3%	
	Heart	4	2.8%	32	9.2%	
	Eye	1	0.7%	1	0.3%	
	Liver	3	2.1%	9	2.6%	
	Bone	2	1.4%	1	0.3%	
	Lang	0	0.0%	6	1.7%	
	All	39	27.1%	113	32.7%	
	I don't know	7	4.9%	18	5.2%	

Our results show that participants had organ donation knowledge from family and social media sources (Figure 1).



**Figure 1** Source of information concerning participants' answers.

#### 4. DISCUSSION

This survey investigates the current attitudes toward organ donation in the Makkah regions' school communities. This study has found a good level of awareness of organ donation. On the other hand, Saudi research found a low perception of awareness regarding kidney donation (Sharaan et al., 2021). Most of the study participants show no waiting for organ donation. A Saudi study shows that about 10.3% of participants were willing to donate irrespective of circumstances (Jabri et al., 2016). In contrast, another Saudi research found that 47.7% had agreed to donate an organ (Alsharidah et al., 2018). Furthermore, another Saudi study reveals that 87.4% support organ donation, while about 53.5% are willing to donate organs (Darwish et al., 2022). The current study found that the majority have no organ donation card, unlike the study of (Jabri et al., 2016), in which the majority 97.3%, have an organ donation card. Our study shows that the kidney is the most organ to donate, in concordance with (Jabri et al., 2016).

"Save someone's life" as organ donation perception was predominant among study participants. This is in line with (Jabri et al., 2016), in which about 82.8% reported the same. The main obstacle to transplantation is the scarcity of suitable organs. Therefore, continuous efforts and planning and implementation are required to improve organ supply. The general public's awareness, particularly that of healthcare students, plays a significant role in increasing the pool of organ donors (Alsharidah et al., 2018). Regular events, lectures and campaigns are desperately needed to raise public knowledge about OD, increase the number of organ donors, enhance the efficiency of the donation process and extend the living donor pool in Riyadh. According to a study conducted on 70 students who completed a pretest and posttest questionnaire after classroom instruction, there is a clear link between educational level and OD knowledge (Alsharidah et al., 2018).

Because some people believe they are not healthy enough to give organs, it is also necessary to interpret the meaning of a healthy organ and go through screening phases before accepting the donation. People should be aware of the specific situations in which OD is contraindicated, such as illnesses of the neurological system, HIV infection, cancer, or a sick organ. The relatives of critically sick patients will benefit from an explanation of the importance of possible donors and clarification of common misconceptions about them (Alsharidah et al., 2018).

#### 5. CONCLUSION

Our findings show a low attitude towards the desire to donate organs. More studies and awareness programs are required to address the national perspective and estimate organ donation awareness levels among Saudi Arabian students and teachers.

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#### Ethical approval

This study was granted the IRB by UQU's research ethics committee with ethical number: (HAPO-02-K-012-2022-03-991).

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**Conflict of interest**

The authors declare that there is no conflict of interests.

**Data and materials availability**

All data sets collected during this study are available upon reasonable request from the corresponding author.

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